

NH RL

EVENT
EVENT RULES
RULES



230118

TOURNAMENT FORMAT

THE 2-ROUND QUALIFIER, SUMMARIZED

Starting in March, our preliminary round for all weight classes will be updated to a 2-round Qualifier. Any bot that goes 0-2 in the Qualifier will be eliminated. All other bots will be seeded into the bracket depending on their performance in the Qualifier.

SEEDING THE QUALIFIER

Bots will be seeded into the first round of the Qualifier on the Tuesday before the event, in a bracket reveal livestream.

Any bots from the same individual builder will not meet in the Qualifiers, up to a maximum of 4 bots. They will also not meet in the bracket, as long as all related bots win all their Qualifier fights, in order to reduce opportunities for tactical forfeits.

To create the initial seeds for the Qualifiers, we will use the a seeding rubric based on a bot's experience level.

- Level 1: Bots that have fought at NHRL before.
 - If bots are tied in rank, they will be seeded randomly.
 - Any unranked Level 1 bots (bots who haven't fought at NHRL since 2021) will be seeded randomly below the ranked bots.
- Level 2: Bots that have fought outside of NHRL.
 - These bots will be seeded randomly within the level.
- Level 3: New bots, from experienced builders.
 - These bots will be seeded randomly within the level.
- Level 4: New bots, from new builders.
 - These bots will be seeded randomly within the level.

Once we have an ordered list of Qualifier seeds, we do not have to worry about Levels anymore; we will go off the ordered list instead.

BRACKET SEEDS

Bracket seeds are different from Qualifier seeds. We give bots Qualifier seeds the Tuesday before the event. We give bots bracket seeds based on their performance in the Qualifiers.



There are four kinds of Bracket seeds we can give a bot.

- Top seed - the highest seeds in the bracket, with the easiest path through the bracket.
- Upper-middle seed
- Lower-middle seed
- Bottom seed - the lowest seeds in the bracket, with the hardest path through the bracket.

Most bots will have to win a fight to earn a spot in the bracket. Bots with high Qualifier seeds are guaranteed to make the bracket, but will need to win a fight to earn a top bracket seed. Some bots will be eliminated before the bracket begins.

THE FOUR QUALIFIER GROUPS

There will be four groups of bots in the Qualifiers.

- In the first round of Qualifiers, we will have the Challenger Group and the Rival Group.
- In the second round of Qualifiers, we will have the Boss Group and the Last Chance Group.

Boss Group: The highest-seeded bots start the Qualifiers here, getting a bye in Qualifiers Round 1. They will be joined by winners from the Challenger Group.

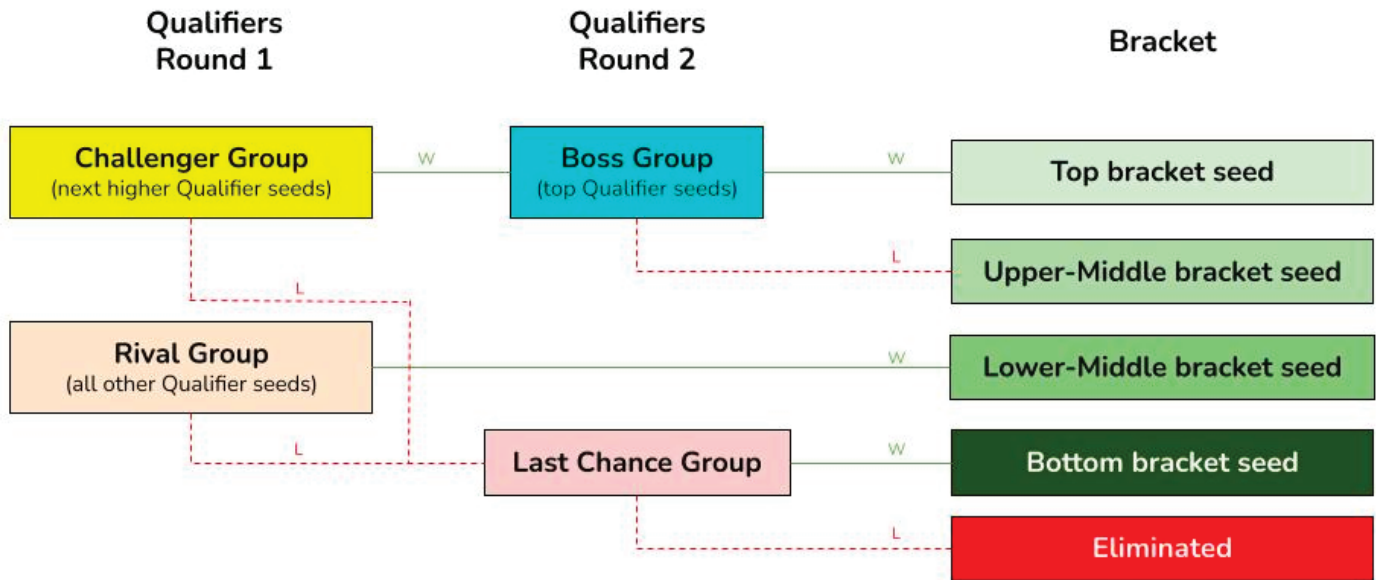
Challenger Group: This group is made up of the next-highest seeded bots, and will be twice the size of the Boss Group. This group fights in Qualifiers Round 1. The winners from this group challenge the Boss Group, while the losers have to go to the Last Chance Group.

Rival Group: This group is made up of all remaining bots that did not go into the Boss or Challenger Groups. This group fights in Qualifiers Round 1. The winners from this group get a bye in Qualifiers Round 2 and are seeded directly into the bracket, while the losers have to go to the Last Chance Group.

Last Chance Group: This group fights in Qualifiers Round 2. The winners from this group will make it into the bottom of the bracket, while the losers are eliminated. Bots eliminated this way will be eligible to fight Freestyle fights.

Round	Group	On win	On loss
Qualifiers Round 1	Challenger	Go to Boss Group	Go to Last Chance Group
Qualifiers Round 1	Rival	Get a Lower-Middle bracket seed and a Qualifiers Round 2 bye	Go to Last Chance Group
Qualifiers Round 2	Boss	Get a Top bracket seed	Get an Upper-Middle bracket seed
Qualifiers Round 1	Last Chance	Get a Bottom bracket seed	Eliminated





BOSS GROUP FORFEITS

If a bot forfeits their Boss Group fight, they get a Bottom bracket seed. This is to discourage tactical forfeits in a Boss Group fight.

If a bot taps out of their Boss Group fight immediately after the start of the match, clearly showing no attempt to actually fight, we will consider it a forfeit in this case.

BOTS FROM THE SAME TEAM

In the Qualifiers, we will make every effort to ensure that bots from the same team will not face each other. We will extend a similar effort to the bracket, but with a caveat: we can only ensure that all bots from the same team will not face each other early in the bracket as long as all of their bots win all their Qualifier matches. Any bot that loses a Qualifier fight may face a related bot early in the bracket.

This effort only applies for a team bringing 2-4 bots. If a team brings more, they may choose subteams, but one subteam may fight another.

THE SINGLE-ELIMINATION BRACKET

All bots will be placed into the single-elimination bracket according to how they did in the preliminary round.

At this point, the event will run with standard single-elimination brackets. All brackets will have an additional fight between the losers of each semifinal fight to determine third place.



QUALIFICATION FOR THE NHRL WORLD CHAMPIONSHIPS

The top 4 bots of each bracket will qualify for the NHRL World Championships at the end of the year.

If a bot that has already qualified earlier in the year makes it into the top 4 again, the highest-ranked bot that lost its Quarterfinals fight (using rankings from before the event started) will qualify.

If there is a tie in the rankings, then all tied bots qualify.

Important: You may choose to forfeit a qualification slot. However, you may not gift your slot to another builder.

NHRL FREESTYLE FIGHTS

Freestyle fights are a series of grudge fights run throughout the day that ensure that every builder gets to fight as much as they can.

All bots that participate in the Freestyle fights must pass safety.

Many Freestyle Fights will happen in the Titanium area at NHRL. This area allows for 3lb and 12lb Sportsman fights. Note that we reserve the right to decline a fight to certain 12lb Sportsman bots if we feel they're a hazard to the cage.

MATCH READINESS

All entrants are guaranteed a certain amount of repair time between the end of any given fight and the start of the next fight. 3lb bots get 20 minutes, 12lb bots get 25 minutes, and 30lb bots get 30 minutes.

At the end of your allotted repair time, you **MUST** check in with Pit watch for a status update. In certain circumstances, additional time may be available to builders before their next match, however, this is ultimately determined by match schedule and queuing time.

Builders who are not prepared for their upcoming match at the end of their 20 minute repair window may be forfeited at the discretion of Pit Watch, Referees or an Event organizer.

Disclaimer: Any builder bringing multiple robots will be expected to manage their repair time effectively. NHRL does not guarantee extra time for builders who bring multiple robots, nor do we guarantee that repair windows will not overlap.

Due to scheduling and bracket structure, we cannot guarantee that any competitor will have the same amount of repair time as their opponent, only that each robot will have at least 20/25/30 minutes of repair time dependent upon their weight class.







MATCH QUEUING, CAGE LOAD-IN, AND UNLOADING

When queuing for, loading and unloading from your match, follow the instruction of event staff. Failure to comply may result in unnecessary scheduling delays, confusion or hazards and may be penalized via the demerit system in extreme cases. If you are unsure what to do or where to go, seek out the proper personnel for assistance or inquire at the “Pit Watch” desk. For more information on our queueing, load-in and unloading procedures, see our ‘Event Operations’ Manual (coming soon).

EVENT SAFETY

At NHRL, Safety is our #1 priority at all times when it comes to robot combat. While combat may look dangerous and exciting in the cage, we work hard to ensure that that excitement stays in the cage. Our safety rules extend to a variety of processes and locations including but not limited to safety inspection, pit behavior, and match load-in and unloading. Failure to comply with safety rules and procedures may result in a penalty via demerit system at least, all the way up through forfeiture from an event, or a ban period.

At NHRL, we use an escalating system of consequences, known as the Demerit system. Typically one infraction results in one demerit. However, Referees, Pit-watch staff, Safety officials or Event organizers may assign multiple demerits at their discretion depending on the severity of the infraction. Demerits are recorded by team, not by builder or robot. Demerits accrued reset after each event.

-  1st infraction: Yellow Card - Warning
-  2nd infraction: Orange Card - Match forfeit
-  3rd infraction: Red Card - Event forfeit
-  4th infraction: Black Card - Year forfeit

Each infraction recorded is accompanied by a debrief, during which a referee or safety official will discuss the incident and how to improve safety. We understand that accidents happen, especially in high stress environments. If you receive a demerit, don't panic- it is not a personal slight. We will do everything in our power to ensure a safe environment for all competition attendees, and will work together to correct the safety issues in question.

Demerits may also be given out for unsportsmanlike behavior. At NHRL we strive to create a competitive, comfortable, and fun environment.

SAFETY INSPECTION

At the beginning of every event, robots must pass a safety inspection, during which a safety official will ensure your robot is in compliance with all design and safety rules. Robots that do not pass safety inspection will be unable to compete. **Safety inspection may only be open for a limited period of time**, so be sure to get your robot checked as early as possible. Contact pit watch, safety officials or an event organizer for specifics on inspection availability.



This process includes:

- Robot weigh-in
- Including alternate configurations and spare robots.
- Weapon Lock/Weapon cover checks
- Radio Fail-safe Testing for weapon and drive systems
- Demonstration of general design requirements:
- Active weapon and controlled motion
- Switch/removable link operation
- Any other functional, weight or design requirements specific to the robots design or weapon type (see Robot Design Rules for specifics)

After successful completion of safety inspection, your team captain or robot driver will be given a robot badge to attach to their builder ID. This must be kept with you at all times, as demerit marks are recorded on it.

THE PITS & ROBOT REPAIR

In order to ensure a safe environment for both builders and staff, it is imperative that builders are not only aware of, but fully compliant with our pit safety rules. Just because your bot isn't actively fighting doesn't mean it, or the environment around it, is not hazardous!

Though alcohol is served at NHRL, it is **never** allowed in the pits or workshop, nor is any active competitor or team member allowed to drink. Alcohol and power tools do not mix.

BATTERY CHARGING

- Any time a battery is charging, it must be attended by a builder or team member.
- Any Lithium chemistry battery must be charged using balance leads.
- If a battery catches fire or presents a safety hazard, make the situation as safe as possible and alert NHRL staff immediately.
- Though not required, it is good practice to have a lipo-safe bag and fireproof resistant gloves nearby when charging.

HAND AND POWER TOOLS

Safety glasses and other appropriate PPE must be worn while working with power tools in the pits or machine shop. See a member of pit watch, safety inspection, or workshop staff if you are unsure what qualifies as appropriate PPE.

- **Power tools that produce sparks, dust, or shrapnel** may only be used in the workshop or in the designated "cutting and grinding" area in the pit.
- **Power tools that produce flames or lasers** may only be used in the workshop shop.
- 3D printers are allowed, but may not be left running overnight.



WEAPON LOCKS

A weapon lock is defined as a mechanism or component that will keep your weapon from being dangerous when your robot is not in the ring. Weapon locks are required during loading and unloading into the ring or test boxes. All robots with an active weapon must have a weapon lock. Failure to follow rules will result in a penalty via the demerit system.

When a weapon lock must be used:

- During robot load-in and unloading from a cage or test box.
- Any time your robot is in transit from one location to another.

Anytime your robot is powered on at NHRL, unless otherwise instructed by a referee, cage manager, pit-watch staff, or safety official.

WHAT WORKS WELL AS A WEAPON LOCK:

- A metal pin, plug or stop that prevents any rotating or translating weapon from spinning, ideally painted or marked with a bright color.
- A plastic or foam cover (such as a pool noodle) over sharp edges, forks or lifters.

WHAT ISN'T GREAT AS A WEAPON LOCK:

- Your hand or any other part of your body
- Anything that can easily fall out or be dislodged.
- Tools such as vice-grips, screw drivers, or clamps

Weapon locks should be a dedicated safety measure and not something that can be misplaced, misconstrued or used for another purpose.

TESTING YOUR ROBOT

All robot testing must be done in a test box! The only exception to this rule is 'Wheels-up' testing for robots with a second dedicated switch for their weapon system.

Robots and/or minibots may not be driven on the floor of the pits, around the competition venue, or outside the test box, regardless of their weapon status.



ROBOT HAZARD STATION

The Robot Hazard Station is an extension of our pit safety efforts. It ensures that potentially hazardous processes are done in a controlled and safe environment outside of the pits. The station is conveniently located by the load-in dock, en-route between the pits and cages. It's marked with appropriate signage and is blocked off by black and yellow stanchions. Failure to use the hazard station appropriately may result in a penalty via the safety demerit system.

The Robot Hazard Station is designed and equipped for two purposes:

- Firstly, it provides a designated location for builders of robots with flamethrowers, pneumatics, hydraulics, internal combustion engines, jets, rocket engines, ramset charges or airbags to safely load, fill, pressurize and depressurize their systems. Robots fitting into one of the listed archetypes **MUST** perform tasks here. Certain exceptions may be made depending on the weapon type and materials used.
- Additionally, it serves as designated post-fire robot inspection and clean-up station in the event that a robot is rushed out of the building after a match.

HAZARD STATION RULES

- No more than 3 teams with 2 representatives each may work in the station at a time.
- Use appropriate PPE when working in the station.
- Return all tools to the cart/cabinet.
- Clean any spills or messes created while working.
- Do not charge batteries in the Hazard Station.
- If recovering from a fire, talk to the hazard station attendant for a check-in.

If you have any questions about the Robot Hazard Station, hazardous robot types or best practices, please reach out to **safety@nhrl.io**.

